

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 15-19 are pending in the present application. Claim 19 is added by the present amendment. Support for additions to the claims can be found in the disclosure as originally filed. Thus, no new matter is added.

In the outstanding Office Action, Claims 15-18 were rejected under 35 U.S.C. §103(a) as being unpatentable over Kerfoot et al. (U.S. Patent 6,704,511, hereinafter Kerfoot) in view of Ryu et al. (U.S. Patent No. 6,330,384, hereinafter Ryu), Coa (U.S. Patent No. 6,731,877) and Hamada (U.S. Pat. No. 5,703,711).

Initially, Applicants note that new Claim 19 has been added which is drafted in means plus function format. Thus, Applicants respectfully submit that new Claim 19 invokes §112, sixth paragraph and respectfully request that this claim be examined in accordance with §112, sixth paragraph.

Moreover, Applicants respectfully submit that Claim 19 patentably distinguishes over the cited Kerfoot, Ryu, Coa and Hamada references, at least because none of these references describes or renders obvious the recited amplification controlling means for modifying a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, as is recited in Claim 19.

The cited Kerfoot, Ryu and Coa references clearly do not describe or suggest the recited amplification controlling means. Further, although the Hamada reference describes an amplifier which has feedback control, Hamada does not describe or render obvious an amplification controlling means for modifying a gain of at least one non-modulated spectrum

slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components.

As is noted in MPEP §2183, in order to anticipate a means element, the cited reference must 1) perform the function specified in the claim, 2) not be excluded by any explicit definition provided in the specification for an equivalent, and 3) be an equivalent of the means-plus-function limitation recited in the claim. In addition, the examiner must provide an explanation and rationale in any Office action rejecting the claim providing why the prior art element is asserted as being an equivalent.

Clearly, the Hamada reference does not in any way perform the function of modifying a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components. Moreover, Hamada does not describe the structure or an equivalent which can perform the recited function.

Thus, Applicants respectfully submit that Claim 19 patentably distinguishes over Kerfoot, Ryu, Coa and Hamada considered individually or in combination.

Moreover, with regard to Claims 15 and 17, Applicants respectfully submit that these claims also patentably distinguish over the cited Kerfoot, Ryu, Coa and Hamada references.

Specifically, Claim 15 recites, in part,

a dummy optical signal source device configured to generate the non-modulated spectrum slice optical signal, including:

...at least a first and second output optical amplifier, each having an input connected to an output of a respective one of the dummy signal optical multiplexers, and having respective outputs,

an amplification controller configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a

predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, and

a dummy signal optical multiplexer connecting the respective outputs of the output optical amplifiers to the optical multiplexer.

Claim 17 is directed to corresponding methods for wavelength division multiplexing and optical transmission.

Kerfoot describes a wavelength division multiplex optical signal including a WDM combiner to provide a source signal, at least one transmitter coupled to an input of the WDM combiner, a broadband noise source, and a filter coupled between the broadband noise source and another input of the WDM combiner. In one embodiment, the filter is an optical notch filter. In another embodiment, the filter includes a WDM demultiplexer coupled through plural filters to provide a plurality of noise signals, and a WDM multiplexer coupled through at least one of the plural filters to respective noise signals.

Ryu describes an optical system having a light source, couplers and amplifiers. Fig. 3 of Ryu shows a signal input terminal terminated without reflection.

Cao describes connecting an optical amplifier 24a to a multiplexer 28 via a dispersion compensating element 26a.

However, as is acknowledged in the outstanding Action as well as the Advisory Action mailed November 18, 2008, Kerfoot, Ryu and Coa do not describe or suggest an amplification controller configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components, as is recited in Claim 15.

Nevertheless, the Advisory Action mailed November 18, 2008 asserts that “using a controller to control an optical amplifier to set a gain to a predetermined profile is well known in the art,” and cites Hamada as evidencing this assertion.

Initially, Applicants note that the amplification controller feature recited in Claim 15 is not equivalent to what is asserted by the Advisory Action as being “well known in the art.” For instance, the claimed amplification controller is configured to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components. This feature is not equivalent to controlling an optical amplifier to set a gain to some generic predetermined profile.

The Advisory Action states

Hamada is cited to show using a controller to control an optical amplifier to set a gain to a predetermined profile is indeed well known in the art. Hamada clearly discloses utilizing a controller to control an optical amplifier to modify the gain to a predetermined gain profile (abstract, column 2, lines 13-32, figs. 1-6). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate a controller of Hamada into the modified system of Kerfoot, Ryu, and Cao. One of ordinary skill in the art would have been motivated to do so in order to provide a gain according to predetermined value.

However, Applicants note that even if the so called “controller” of Hamada were to be incorporated into the system of Kerfoot, Ryu, and Cao, such a combination **would not render obvious** the claimed invention. The outstanding Action appears to be simply ignoring certain features recited in the claim.

For instance, Applicants note that Hamada **is not able** to modify a gain of at least one non-modulated spectrum slice optical signal component **in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal**

components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components.

However, the outstanding Advisory Action appears to tacitly acknowledge this deficiency in lines 9-11 and states “in accordance with KSR, “it is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle.” See KSR, 137 S. Ct. at 1742, 82 USPQ2d at 1397.”

However, if the Advisory Action wishes to assert that it would be obvious based on the holding in KSR to modify the combination of Kerfoot, Ryu, Cao and Hamada in order to meet the features of the claimed invention, Applicants note that there a burden that must be met by the Advisory Action, which is not and cannot be met. Specifically, as is noted in *Ex Parte Whalen*, the KSR Court noted that it must be shown that those of ordinary skill in the art would have had some “***apparent reason to combine the known elements in the fashion claimed***” (emphasis added).

As is noted in MPEP §2141, “the key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of ***the reason(s)*** why the claimed invention would have been obvious. The Supreme Court in KSR noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that “[R]ejections on obviousness ***cannot be sustained by mere conclusory statements***; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” KSR, 550 U.S. at ___, 82 USPQ2d at 1396” (emphasis added).

In the present case there has been provided no reason why the combination of Kerfoot, Ryu, Cao and Hamada should be modified in order to meet the features of the claimed invention. Moreover, Applicants note that one skilled in the art using the

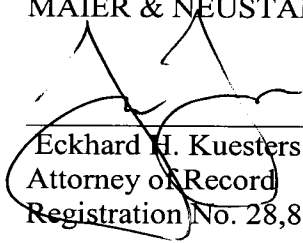
combination of Kerfoot, Ryu, Cao and Hamada would have not had a reason to make this modification. Without the disclosure of the claimed invention, one skilled in the art would not have had a reason to configure an amplification controller to modify a gain of at least one non-modulated spectrum slice optical signal component in order to maintain a predetermined overall gain profile of the non-modulated spectrum slice optical signal components when no signal is available for amplification for one of the non-modulated spectrum slice optical signal components. Thus, a rejection merely citing KSR as a stop gap to fill disparities in the description of the cited combination is not proper without articulated reasons, which Applicants note do not exist in the present case.

Accordingly, Applicants respectfully submit that Claims 15 and 17, and claims depending therefrom, respectively, patentably distinguish over Kerfoot, Ryu Cao and Hamada considered individually or in combination.

Consequently, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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